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DOCUMENTATION AND IDENTIFICATION
OF THE REMAINS OF THE 1882
SCHOONER NEPTUNE

JAMES P. DELGADO



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DOCUMENTATION AND IDENTIFICATION OF THE REMAINS OF THE 1882 SCHOONER NEPTUNE

AT FORT FUNSTON, OCEAN BEACH

GOLDEN GATE NATIONAL RECREATION AREA

SAN FRANCISCO

(CA-SFr-107H)

James P. Delgado

Park Historian

Golden Gate National Recreation Area

San Francisco, California

ABSTRACT

In late December of 1982 the remains of a wooden vessel were exposed by seasonal beach erosion at Fort Funston, a unit of the Golden Gate National Recreation Area located on San Francisco's Ocean Beach. Threats to the exposed remains included visitor impact and destruction by continued erosion. Rather than salvage the remains, park staff documented the location, characteristics, and size of the remains; this was accomplished between December 27 and 29, 1982 by the author and local archaeologists who volunteered their services. Despite the scanty nature of the remains, consulting naval architect Raymond Aker was able to determine the relative size and age of the wrecked vessel. Historical research followed, culminating with a determination that the remains represented a portion of the two masted 1882 lumber schooner Neptune, which wrecked on Ocean Beach on August 10, 1900. The remains were subsequently reburied by another storm. Positive results of the project included the first recording and documentation of exposed shipwreck remains within the boundaries of the Golden Gate National Recreation Area, a vessel-specific identification of those remains, and the non-destructive examination of vessel construction characteristics and techniques for comparison with other shipwreck remains. Additionally, the project began an effort in the park to develop a standardized format for the recording of shipwreck remains. Media coverage of the project also engendered a positive public response to maritime archaeology.

INTRODUCTION

On December 26, 1982 staff members of the Golden Gate National Recreation Area's Ocean District noted that the remains of a wooden vessel had been exposed by winter storm activity at the Fort Funston portion of Ocean Beach. Fort Funston, a unit of the Golden Gate National Recreation Area and a former military installation, includes the southern portion of San Francisco's Ocean Beach. Severe winter storms during the last weeks of 1982 had swept great amounts of sand from the beach as gale force winds, extreme high tides of +4.9 and 5.1, and giant waves

battered the shoreline. Two miles north of the site of the remains beach erosion was measured and showed an elevational drop of 1.5 to 9.0 feet; the beach also receded by 63.5 feet between October 1982 and January 1983 (Howell 1983). While winter beach erosion was an expected seasonal event, the severe storms of 1982 caused greater erosion and exposed the previously unknown remains of the ship wrecked at Fort Funston.

VESSEL REMAINS

The vessel remains as found were nestled against the steep cliffs of Fort Funston almost directly below a National Park Service developed overlook. At the foot of the one hundred and thirty foot high cliffs lay the remains, which rested upon an exposed substrata of sandstone and mudstone shingle. The remains were partially buried beneath sand, silt, and wave-washed boulders. Mixed in the fill were chunks of concrete and pieces of chain-linkfencing which had tumbled down the cliff from the military installation above. Additionally the cliff in the immediate vicinity of the remains is covered with sand as a result of 1950s construction of a Nike Missile Installation atop the cliff. Sand dunes at the construction site were bulldozed flat and pushed off the cliff, deeply burying the beach and the site of the shipwreck; prior to that time the vessel remains may have been periodically exposed.

A documentation and recording of the remains was accomplished between December 27 and 28, 1982 by Park Historian James Delgado of the Golden Gate National Recreation Area and two local archaeologists who volunteered their services, Gregory J. Brown of San Francisco and Rebecca G. LaFontaine of Mill Valley. Site photography and additional recording was accomplished on December 29 with the assistance of volunteer archaeologist Robert L. Bennett of San Rafael.

No permanent benchmark was present at the site; for recording purposes the remains were plotted in relation to a permanent concrete storm sewer outlet three hundred feet due north. Additionally a compass bearing was taken to obtain the orientation of the remains. Identified structural elements were measured, sketches made of diagnostic construction details, and a photographic record made of the site. All sand, silt, and shingle covering the remains was hand-excavated to expose the full extent of the wreckage. No period artifacts were recovered; three 1970s vintage one cent pieces were found, having apparently been deposited on the site by beach visitors. Ship fittings proved particularly diagnostic; four chainplate fragments attached to the remains showed that the remains came from the starboard side of the ship's hull, roughly amidships and extending towards the stern. Representative samples of fittings and vessel timbers were removed for later analysis. During the recording, valuable advice and assistance was rendered by Acting Curator Stephen Canright of the National Maritime Museum.

As mentioned above the remains represented a portion of the starboard side of the hull running from midships aft to the stern. The remains comprised the side of the hull from the turn of the bilge to a point below the sheerstrake; the fragmentary remains of a beam-shelf was noted towards the aft end. No bottom timbers (e.g. keelson, sister keelson) were noted. The timbers were fastened to the frames with iron clench bolts with clench rings, treenails, and iron spikes counterset into the planking and concealed by wooden plugs. The chainplates, of which only stubs remained, were strap iron and were spaced within thirty-five inches of each other; fastenings were noted for a missing backstay eleven inches from the last chainplate fragment. The frames were scarph-cut. Identical fittings and chainplates and similiar construction

techniques were noted on the 1895 lumber schooner C.A. Thayer, which is moored at Hyde Street Pier as one of the National Maritime Museum's floating museum ships. The C.A. Thayer was built by Hans Bendixson of Fairhaven, California and is a registered National Historic Landmark.

The remains of the vessel consisted of one major piece forty eight feet, five inches long and seven feet, six inches wide. This was the largest piece of wreckage found. It rested on a 352° axis. Other smaller pieces of wreckage, notably a small fragment of bottom timbers (perhaps a stempiece), a detached futtock, and fragments of ceiling planking lay in the immediate vicinity of the hull piece. With the exception of the supposed stempiece, it is thought that the futtock and planks were washed off of the exposed hull section soon after it was uncovered. These pieces were removed from the beach by subsequent high tides; they were not noted on the beach after December 28.

ANALYSIS

Measurements and photographs of the remains were given to consulting naval architect Raymond Aker of Palo Alto for analysis. While the remains proved too scanty to provide Aker with enough data to determine the actual dimensions of the wrecked ship, he was able to determine that it was a West coast built, late Nineteenth century vessel approximately one hundred feet long. The vessel was of shallow draft, perhaps around nine feet, since the seven foot, six inch portion of the hull represented nearly the entire depth of the hold, from the turn of the bilge to just below deck level. Factors in determining the age and origin of the ship included the exclusive use of iron fittings, the use of strap iron chainplates, the heavily constructed ("overbuilt") character of the remains, the similiarity of construction technique with the 1895 C.A. Thayer,

and the exclusive use of douglas fir in the vessel's construction. The wood samples taken from the remains were analyzed by the University of California's Forest Products Laboratory in Richmond. Samples from a futtock, treenail, and ceiling planking were found to be douglas fir (Pseudotsuga). Douglas fir was commonly used in West coast built ships, being an indigenous tree; its exclusive use in the wrecked vessel would indicate a West coast origin.

Aker felt that the vessel had been a small coastal schooner, probably two-masted, and engaged in the West coast lumber trade. Two masted schooners were common on the coast, being the craft most frequently built. In 1876 there were four hundred and sixty two two-masted schooners registered at San Francisco (Kortum 1980:71)

DETERMINATION OF IDENTITY

With the results of the analysis in hand historical research commenced in January of 1983. Helpful advice was provided by local historian Max L. O'Starr of San Mateo County. Additionally a detailed wreck chart compiled by George Davidson of the United States Coast and Geodetic Survey in the late Nineteenth century was also consulted. Two vessels were found to have wrecked in the immediate vicinity of the site of the exposed remains; the 1863 schooner William Frederick, which wrecked on July 4, 1887, and the 1882 schooner Neptune, which wrecked on August 10, 1900. Photographs were located showing the wreck of the Neptune from four separate orientations which closely placed the vessel within the target area. Finally, the remains were deduced to be from the Neptune. The reasons for the determination were seven-fold:

1. The photographs showed the Neptune

high on the beach in the area of the exposed remains.

2. Newspaper accounts and the official reports of the wreck by the United States Life-Saving Service placed the wreck two miles south of San Francisco's Sloat Boulevard--about one thousand feet south of the site.
3. Documented sand movements and currents at the site move north; hence any vessel wrecked to the immediate north of the site would not drift southerly and Neptune remains could drift the short distance north to the site of the remains.
4. Aker's analysis showed that the vessel was a late Nineteenth century ship about one hundred feet long with a depth of hold roughly nine feet deep. The Neptune was 106 feet long and had an eight foot, seven inch depth of hold. The only other vessel known to wreck in the immediate vicinity, the William Frederick, was 63 feet long and had a four foot depth of hold.
5. The late Nineteenth century date of construction better fit the 1882 Neptune than the 1863 William Frederick.
6. Photographs and wreck accounts state the Neptune went high up on the beach. The remains were found above the high tide line.
7. Photographs of the Neptune show strap iron chainplates.

The evidence seems rather conclusive; the remains exposed at Fort Funston represent wreckage of the Neptune.

HISTORICAL BACKGROUND

The discovery of gold in California in 1848 brought thousands of eager fortune seekers to the western shore of the continent. As a result dozens of mining

camps and towns were established; at the same time established urban centers such as San Francisco boomed. To meet the demands of a rapidly growing population, lumber was first imported from the eastern seaboard of the United States; by 1852, however, entrepreneurs had turned to the large stands of redwood and douglas fir that lined the shores of California, Oregon, and Washington. Because of the labor and costs involved in building railroads or wagon roads to reach the dozens of mills operating in the forests and nestled along the coast, the sea became the highway of the lumber trade. After being felled and milled, the lumber was taken to schooner landings to be loaded aboard and taken to market.

The lumber was usually loaded by means of "chutes" or wire cable supported troughs from which the milled lumber could be shot down the cliffs to the decks of waiting ships anchored at the other end. As described by Captain Carl Rydell, an old lumber hand, the process involved quick thinking and fast action:

The lumber is sent down the chute, near the end of which a man operates a brake to check the force with which the lumber descends. The seamen stand ready to catch the lumber as it leaves the chute. As each man gets a piece of timber he runs with it, lays it down exactly where it belongs, and returns to the chute....(Kortum and Olmsted 1971:45)

Chutes were needed since most lumber "ports" or landings were mere "dog-holes" where a ship could barely fit, anchored close to the rocky shoreline and imminent destruction. Swift currents, hidden rocks, dense coastal fogs and strong winds made sailing on the coast dangerous; in the tight landings of the lumber mills, small, maneuverable ships were needed. As a result, small schooners with long, wide, and shallow holds were built. Most were constructed from the very timber they would later carry to market, douglas fir. Eventually, hundreds of West coast lumber schooners were built to do yeoman duty on the

miles off Cape Mendocino the Neptune suddenly began leaking, and before the pumps could be got in working order there were four feet of water in the hold. Captain Johnson managed to reduce the amount to three feet, but could make no greater headway against the leak, and decided to return to this port. (San Francisco Chronicle, August 5, 1900)

After a quick drydocking and repairs the Neptune was ready to sail on August 10th. According to Captain Johnson,

We sailed from Main-street wharf this afternoon at 1 o'clock and became becalmed after getting outside the Heads. We began drifting toward Mussel rock, and as we approached the shore we became caught in a strong and dangerous current that sets inshore at that point. We dropped both of the schooner's anchors, but they failed to hold. Then we launched the boats and put out what is known as a cat anchor. The schooner kept drifting in spite of all we could do to prevent it and we were soon on the sand. (San Francisco Chronicle, August 11, 1900)

According to the report of the United States Life-Saving Service, the Neptune stranded on the beach two miles south of the Life-Saving Station on Sloat Boulevard, near the San Francisco/San Mateo County line. (United States Life-Saving Service 1900:286-287)

Having spotted the vessel coming in, the Life-Saving Station crew immediately responded to the wreck and pulled Captain Johnson and his crew off the Neptune, which by that time was hard aground and pounding heavily on the sand. No one had been hurt, the only casualty being twenty-five dollars worth of barley in the hold. Late in the evening on the 10th the tugboat Alert was sent out to pull the Neptune off the beach. By the time the Alert arrived, however, the tide had fallen and the ship could not be reached. By the next morning the Neptune had been pushed even farther up the beach; "At high tide the waves break over

her and at low water she is high and dry, with her keel buried deep in the sand." (San Francisco Examiner, August 12, 1900) According to the San Francisco's Examiner's account of the wreck,

The little vessel is in a worse position than if she had struck on the rocks, for the reason that she is imbedded in the quicksand, and the wash of the waves will soon throw up a barrier around her that will be hard to dig away. (San Francisco Examiner, August 11, 1900)

The Examiner further stated that "It is the opinion of nautical men that she will remain where she is until a storm breaks her up and scatters her bones along the beach." The nautical men were also apparently less than satisfied with Captain Johnson's loss of the Neptune. The ship was not lost due to storm waves or high winds; rather

The weather was clear and calm. The flood tide did the mischief. With not enough wind to fill her sails she crept almost imperceptibly toward the shore until she got into the breakers, lost headway and thrust her bow into the sand. (San Francisco Examiner, August 11, 1900)

What dissatisfied the nautical men was the fact that Captain Johnson, upon first realizing that he was drifting, did not anchor. The Neptune floated along Ocean Beach until Johnson finally grew alarmed at the proximity of the shore. It was then too late to save the ship. (San Francisco Morning Call, August 11, 1900) Additionally criticism arose over the fact that Johnson had asked for a Red Stack tug when he went ashore. Informed that a Spreckels tug was available and the Red Stack tug was not, he refused a tug and in doing so probably lost the ship to the falling tide and the sands of Ocean Beach.

On August 12th the San Francisco Chronicle reported the Neptune "A Total Loss":

The schooner Neptune, which drifted ashore two miles below the Ocean House, outside the harbor, late Friday night, is expected to be a total loss, and has sunk in the quicksand to such an extent that efforts to pull her out in deep water proved futile yesterday....The Neptune was...valued at about \$6000.

One last attempt to pull the Neptune off the beach failed on August 12th; after straining at the lines, the tugs departed for the last time, "leaving the ill-fated vessel to bleach its bones on the beach." (San Francisco Chronicle, August 13, 1900)

CONCLUSIONS

The hull remains exposed by winter storm erosion in late December 1982 do appear to be the "bleached bones" of the schooner Neptune. Despite the admonition of noted maritime historian and naval architect William Avery Baker that vessels driven ashore are broken up and scattered and hence "A study of the remains of such a vessel and its contents is rarely fruitful; items retrieved may be of interest only as curiosities from the sea" (Baker 1979: 141) significant data was retrieved from the remains of the Neptune. Even in the case of fragmentary remains (such as those of the Neptune) detailed recording can reveal a great deal about the original ship, and hence learn something about the culture and society which produced and utilized the vessel. The documentation and recording of the Neptune remains provides additional information about shipbuilding practices on the West Coast in the Nineteenth century; fortunately the work also made possible a vessel-specific identification of the remains. This was the first project to record and document shipwreck remains within the boundaries of the Golden Gate National Recreation Area;

as a result of this, park staff members are now working on a standardized procedure and format for the recording of vessel remains as part of a systematic and comprehensive survey effort of shipwrecks within the park. Additionally, positive media coverage of the project has resulted in a higher level of public support and an appreciation of maritime archaeology.

RECOMMENDATIONS

The results of this project clearly demonstrate the promise of "maximum results from minimum remains." The potential for additional shipwreck remains to be exposed along the shoreline area of the Golden Gate National Recreation Area is great; in each case the remains should be carefully documented and recorded:

Just as great cathedrals were built with
nickle and dime contributions, so will
small contributions from nautical arch-
eology play an important role in the
total description of man's past. (Steffy
1977:54)

Additional work should eventually be undertaken at the site of the Neptune's wreck. Magnetometer surveys may reveal additional, buried wreckage. A careful monitoring of the site during periods of extreme beach erosion may reveal additional wreck components. All remains should be left in situ, though, with data being the only thing removed from the site.

SOURCES

- Aker, Raymond
1983 Consulting Naval Architect, Palo Alto. Personal Communication.
- Baker, William A.
1979 The Technical Importance of Shipwreck Archaeology In Calvin R. Cummings, ed. Underwater Archaeology: The Proceedings of the Eleventh Conference on Underwater Archaeology. Fathom Eight, San Marino.
- Canright, Stephen
1983 Acting Curator, National Maritime Museum, San Francisco. Personal Communication.

- Howell, Judd A.
1983 Natural Resource Specialist, Golden Gate National Recreation Area. Personal Communication.
- Kortum, Karl
1980 San Francisco Maritime History In Gladys Hansen, ed. San Francisco Almanac. Presidio Press, San Rafael.
- _____ and Roger Olmsted
1971 it is a dangerous looking place: Sailing Days on the Redwood Coast, California Historical Society Quarterly, L, 1, 43-58.
- McNairn, Jack and Jerry MacMullen
1945 Ships of the Redwood Coast. Stanford University Press, Stanford.
- Merchant Vessels of the United States
1886 "William Frederick"
- _____ "Neptune"
1900
- O'Starr, Max L.
1982 Historian and newspaperman, Pacifica. Personal Communication.
- Paasch, Captain H.
1889 Illustrated Marine Encyclopedia. Antwerp.
- Steffy, J. Richard
1977 Maximum Results from Minimum Remains In J. Barto Arnold III, ed. Beneath the Waters of Time: The Proceedings of the Ninth Conference on Underwater Archaeology. Texas Antiquities Committee Publication Number 6.
- Works Progress Administration
1941 Ship Registries and Enrollments, Port of Eureka, California, 1859-1920. San Francisco.
- United States Life-Saving Service
1900 Annual Report of the.... Government Printing Office, Washington, D.C.

NEWSPAPER ACCOUNTS

- Humboldt Times August 15, 1900
- Pacifica Tribune and Buyer's Guide June 3, 1981 14:1-5
- San Francisco Chronicle August 5, 1900 7:4
August 11, 1900 12:4 and 14:2-3
August 12, 1900 7:4
August 13, 1900 9:2

San Francisco Daily Morning Call

August 11, 1900 7:2-3

San Francisco Examiner

August 11, 1900 2:5

August 12, 1900 20:3

ACKNOWLEDGEMENTS

The following people were most gracious with their time, effort, and information:
Ray Aker, Robert Bennett, Greg Brown, Steve Canright, Judd Howell, Karl Kortum,
Rebecca LaFontaine, and Max L. O'Starr.

APPENDICES

I. Site Map

II. View of Site

III. Views of the Wreck of the Neptune

IV. Hull Remains

V. Comparative Measurements
Neptune and C.A. Thayer

VI. Newspaper Articles About
the Project

VII. Wood Analysis

I. SITE MAP

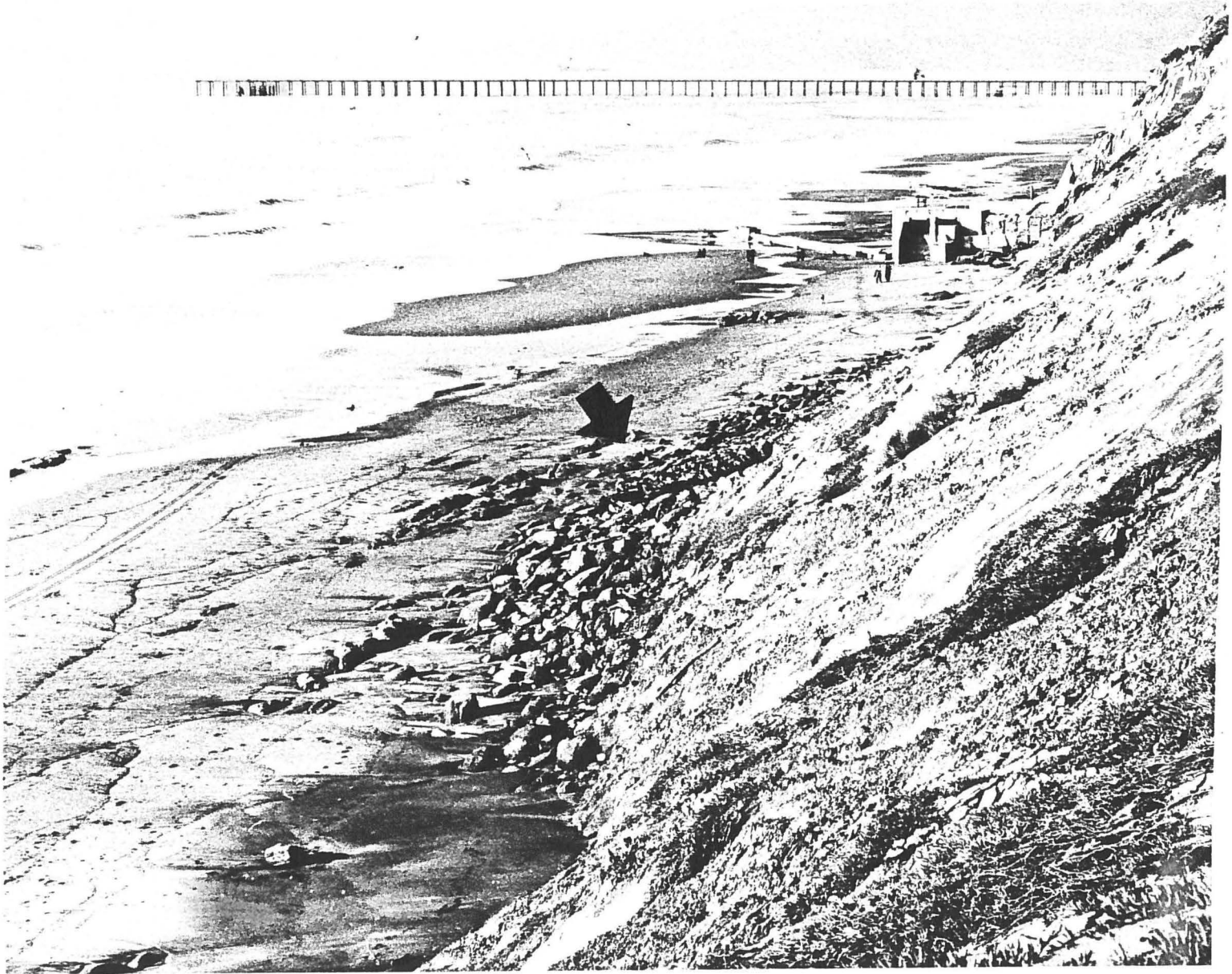
II. VIEW OF SITE

December 27, 1982

National Park Service

Photograph by Charles Ragland

View North by Northwest



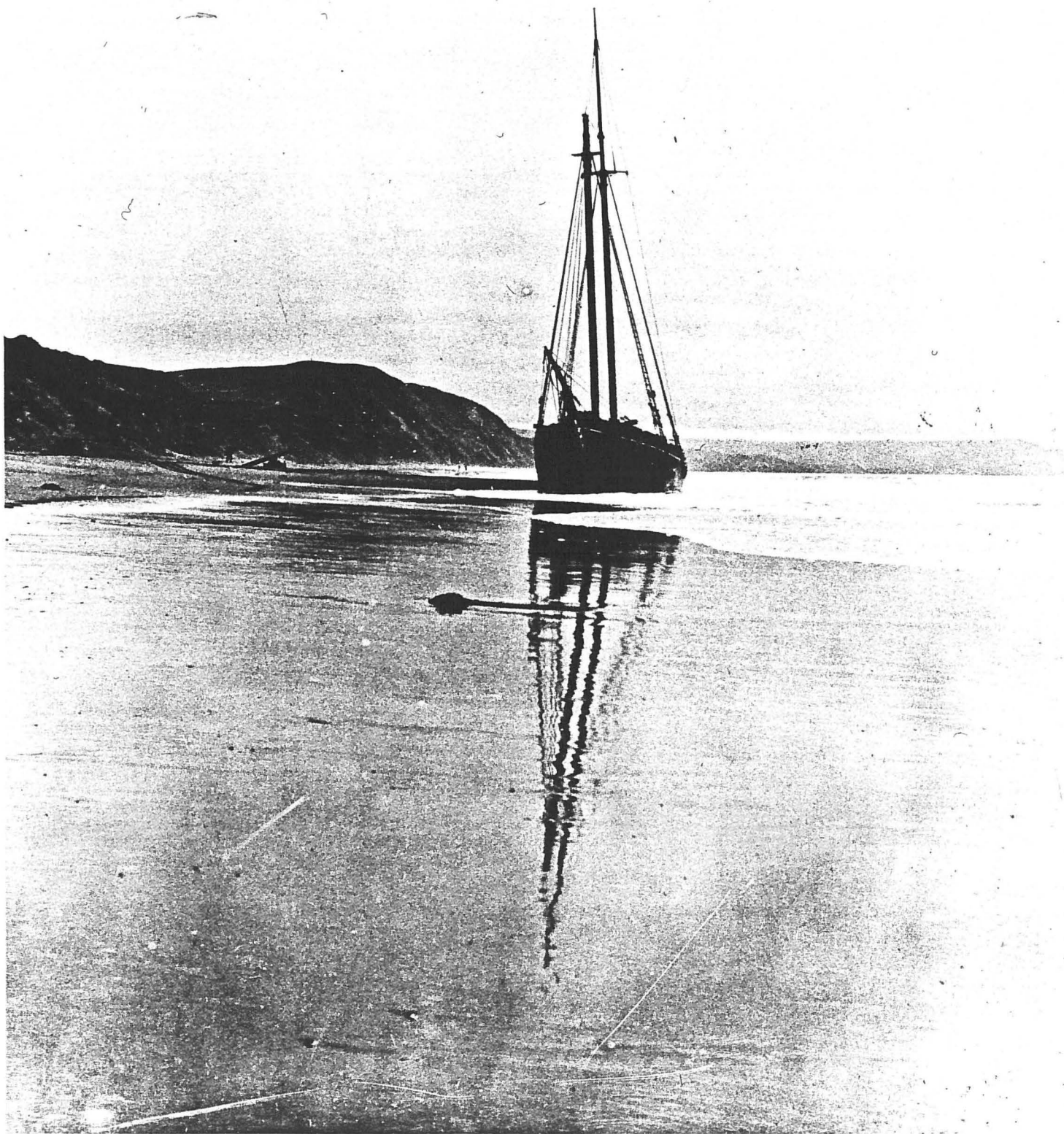
S.S. NEPTUNE HULL REMAINS

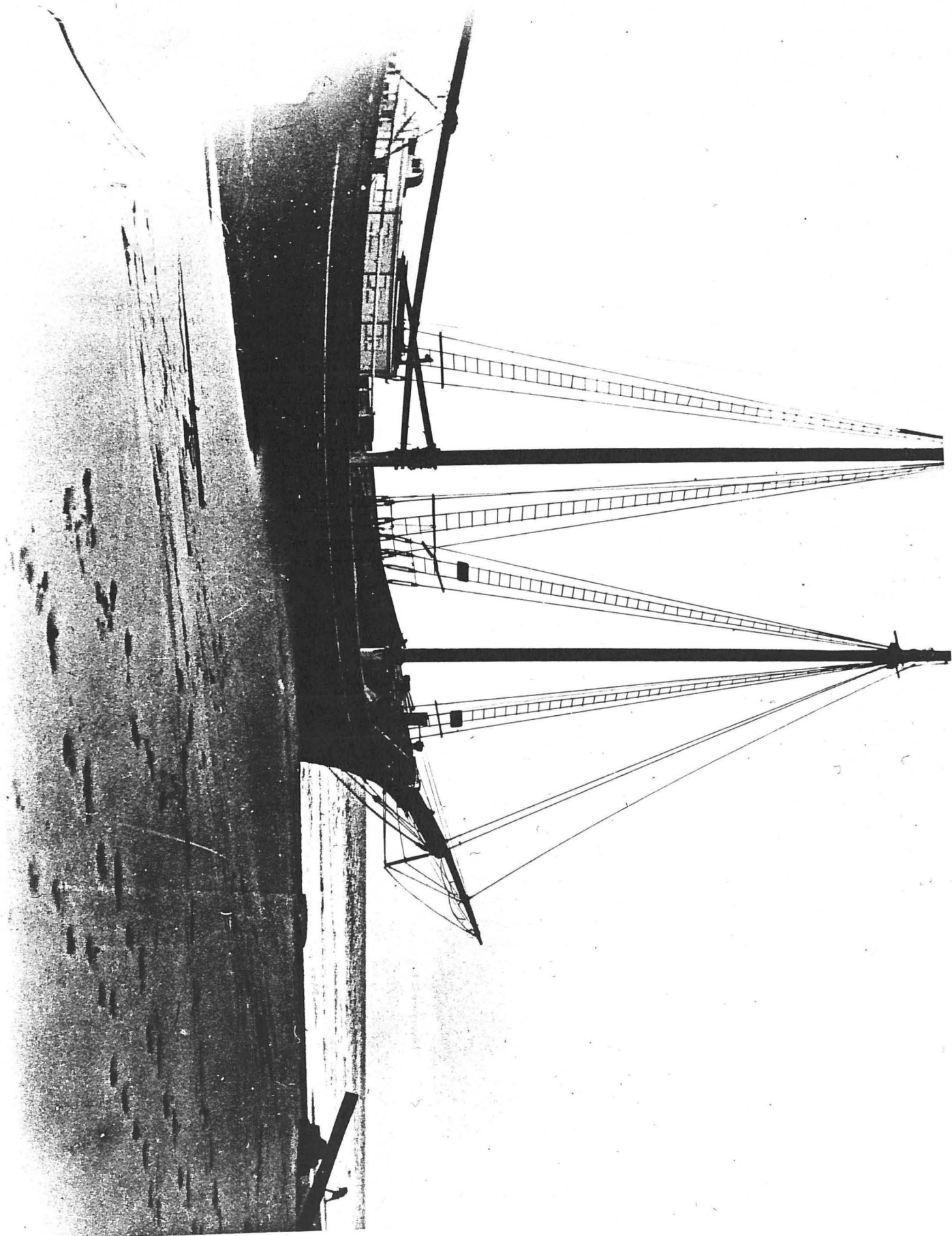
III. VIEWS OF THE WRECK OF THE NEPTUNE

August, 1900

Photographs by W.A. Scott
Procter Collection
National Maritime Museum
San Francisco







IV. HULL REMAINS

Showing Representative Sections

REPRESENTATIVE SECTION

S.S. NEPTUNE

Hull Remains
(Ceiling Planking)

Fort Funston
Golden Gate National Recreation Area
San Francisco
California



LEGEND

- a. drift bolt (covered with concretion)
- b. treenail
- c. futtock

S.S. NEPTUNE (1882)

Hull Remains

Starboard Side of the Ship, from the Turn of the Bilge to the Sheerstrake
Representative Section of the Hull, Amidships

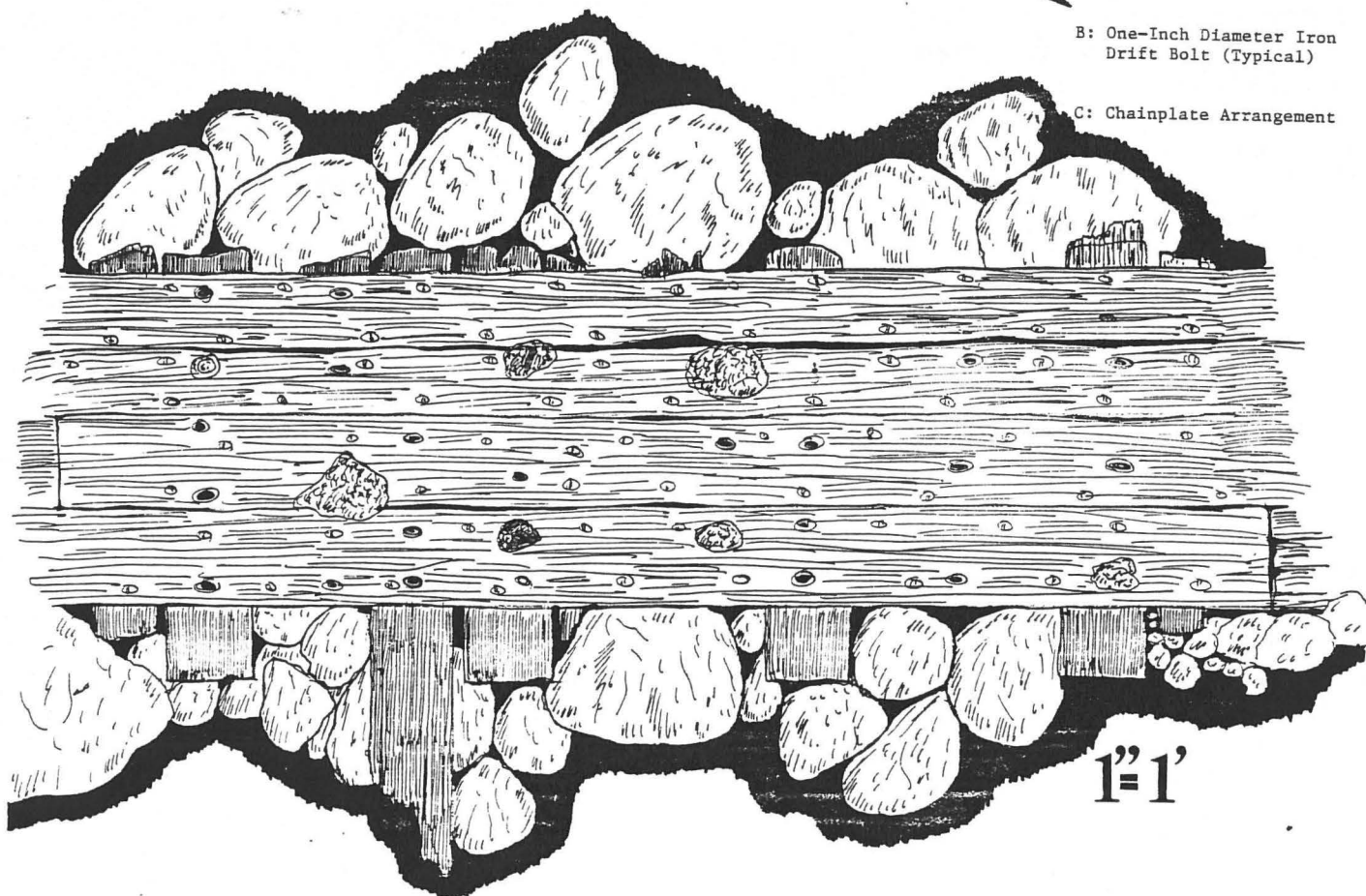
Based on Field Notes Made on 12/27, 12/28 and 12/29 by
James P. Delgado, Rebecca G. LaFontaine, Gregory Brown
and Robert L. Bennett

LEGEND

A: Iron Spike Counterset
with wooden plug (Hull
Planking)

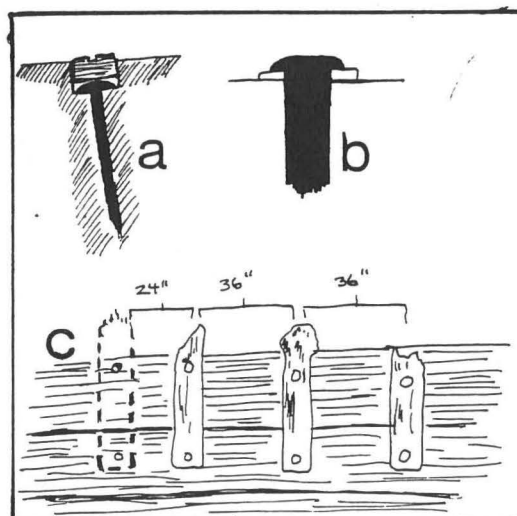
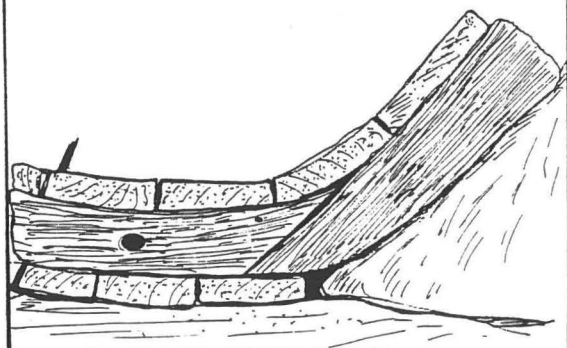
B: One-Inch Diameter Iron
Drift Bolt (Typical)

C: Chainplate Arrangement



PROFILE

Showing Futtock Detail
Scale: 1"=1'



V. COMPARATIVE MEASUREMENTS
NEPTUNE AND C.A. THAYER

COMPARATIVE MEASUREMENTS AND CHARACTERISTICS

	<u>Neptune</u>	<u>C.A. Thayer</u>
Ceiling Plank Width	10" 8" 6"	12" 12½" 14" 15"
Ceiling Plank Length	29' 11" (Incomplete)	69'
4th Futtock Width	9"	11"
Treenails	1½" diameter	1½" diameter
Clench Bolts	1" diameter	1" diameter
Clench Rings	1½" diameter	1½" diameter
Chainplates	3½" wide	3½" wide
a. Spacing	11" - 34" - 35" -(?)- (?)	16" - 35" - 36" - 35" - 34"

CHARACTERISTICS:

Treenails-----Identical measurements
and technique

Clench Bolts-----Identical measurements
and technique

Futtock Connection----Identical technique.

Chainplates-----Identical measurements
and technique

Plank connections-----Identical technique

VI. NEWSPAPER ARTICLES ABOUT
THE PROJECT



James P. Delgado on the timbers of schooner found on Ocean Beach

Latest Storm Dug Up An Old Shipwreck

By Don Wegars

Another puzzling bit of San Francisco archeology — this one a 50-by-10-foot section of a wooden schooner probably wrecked off Ocean Beach a century ago — was unveiled yesterday by the Golden Gate National Recreation Area.

The mystery debris actually was uncovered at the foot of a sandy cliff below Fort Funston last week by the driving storm that swept across the Pacific to lash Northern California's coastline.

The wreckage was still there yesterday to be shown off formally by recreation area historian James P. Delgado, who basked in the warm December sun while summoning up heavy weather from decades back.

"There were uncharted shoals, strong currents, heavy fogs," Delgado said. "Mariners were constantly running aground 100 or so years ago. We estimate that 300 (vessels) may have come to a bad end at the entrance to San Francisco Bay."

The wreckage that now rests on the rocks at Ocean Beach, he said, probably came from a ship similar to the C. A. Thayer, the 1895 lumber schooner now moored for exhibition at the Hyde Street Pier.

Because the hull is probably douglas fir or

spruce it's a good bet the wrecked ship was built on the West Coast.

"The frames are closely spaced, too," Delgado said, "and West Coast boats were notoriously overbuilt."

Last week's storm wrenched tons of sand and rock away from the shoreline, exposing the waterlogged and weathered timbers, which came from the deck-to-bilge section of the mystery ship's hull.

Delgado and historians and archeologists from the recreation area and the National Maritime Museum are now measuring the wreckage. Details will be given to a naval architect, who will try to sketch what the whole ship looked like. Then workers will go through shipping records from the end of the last century to see what ships of that type were lost around the Golden Gate.

"Most of the ships built then had no plans, so that knowledge is lost to us," Delgado said. "We hope to recapture that knowledge."

The timbers themselves will remain on the rocks unless new storms bury them again or sweep them out to sea.

"We'll leave them to the elements and future generations," Delgado said.

San Francisco Chronicle, April 7, 1983

Storm Debris Traced To 83-Year-Old Wreck

Debris uncovered by storms at Fort Funston beach in San Francisco last December was identified yesterday as the wreckage of the schooner Neptune, which ran aground in 1900.

James Delgado, historian for the Golden Gate National Recreation Area, which includes the beach, said research verified that the exposed remains — a 48-foot hull section and several smaller pieces — belonged to the Neptune.

He said the debris was linked to the Neptune through historic photos of the ship's grounding; a comparison of fittings from the wreck with another schooner of the same era, the C. A. Thayer, now moored at the Hyde Street Pier; and an analysis of the uncovered timbers.

Raymond Aker of Palo Alto, retired president of the Drake Navigators Guild and consulting naval architect, and historian Max L. O'Starr of Pacifica were among those who helped the National Park Service solve the mystery of the Fort Funston find.

The Neptune, outbound in ballast from San Francisco to take on a cargo of shingles and piling up the coast, blew ashore on Aug. 10, 1900. A newspaper account of the day reported: "It is the opinion of nautical men she will remain where she is until a storm breaks her up and scatters her bones along the beach."

Scattered they were, and now, four months after her bones were bared by the sea, they lie reburied by the sands kicked up by more recent storms.

VII. WOOD ANALYSIS

COOPERATIVE EXTENSION
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FOREST PRODUCTS LABORATORY
47TH ST. & HOFFMAN BLVD.
RICHMOND, CALIFORNIA 94804

415/231-9404
415/231-9582

February 11, 1983

James P. Delgado
Park Historian
U.S. Department of Interior
National Park Service
Golden Gate National Recreation Area
Fort Mason, San Francisco, CA 94123

Dear Mr. Delgado:

Enclosed please find our Wood Identification Nos. 83-03, 83-04,
and 83-05. I hope they are helpful.

If you have questions concerning the identifications, please
contact Jonathan D. Lew, 415/231-9517.

Sincerely,

Donald G. Arganbright
Director

DGA:jm

Enclosures

cc: W. A. Dost
J. D. Lew
N. C. Rem

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RICHMOND, CALIFORNIA 94804

James P. Delgado
Park Historian
US Department of Interior
National Park Service
Golden Gate National Recreation Area
Fort Mason, San Francisco, CA 94123

WOOD SPECIMEN IDENTIFICATION
Report No. 83-03

Date February 11, 1983

Date Received February 4, 1983

This report is for specimen No. 1 of the 3 specimen(s) included in your request received on this date.

INFORMATION RECEIVED WITH SPECIMEN

Botanical name: _____

Common name: Douglas-fir

Geographic origin: _____

Nature of specimen: treenail

Historical ☒ Commercial _____ Wood in service _____

Litigation _____ Other _____

Physical description and Comments: _____

RESULTS

Botanical name: Pseudotsuga

Commercial name: Douglas-fir

Comments: _____

Methods used in identification:

Intermediate magnification (7 X - 30 X) _____

Microscope (100 X, 450 X) ☒ Hand lens (10 X) ☒

DISPOSITION OF MATERIAL

	Retained (1 year)	Returned To You	Added to Our Collection	Discarded
Sample	_____	<input checked="" type="checkbox"/>	_____	_____
Microscope Slides	<input checked="" type="checkbox"/>	_____	_____	_____
Photographs	_____	_____	_____	_____

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RICHMOND, CALIFORNIA 94804

James P. Delgado
Park Historian
US Department of Interior
National Park Service
Golden Gate National Recreation Area
Fort Mason, San Francisco, CA 94123

WOOD SPECIMEN IDENTIFICATION
Report No. 83-04

Date February 11, 1983

Date Received February 4, 1983

This report is for specimen No. 2 of the 3 specimen(s) included
in your request received on this date.

INFORMATION RECEIVED WITH SPECIMEN

Botanical name: _____

Common name: Douglas-fir

Geographic origin: _____

Nature of specimen: ceiling planking

Historical X Commercial _____ Wood in service _____

Litigation _____ Other _____

Physical description and Comments: _____

RESULTS

Botanical name: Pseudotsuga

Commercial name: Douglas-fir

Comments: _____

Methods used in identification:

Intermediate magnification (7 X - 30 X) _____

Microscope (100 X, 450 X) X Hand lens (10 X) X

DISPOSITION OF MATERIAL

	Retained (1 year)	Returned To You	Added to Our Collection	Discarded
Sample	_____	<u>X</u>	_____	_____
Microscope Slides	<u>X</u>	_____	_____	_____
Photographs	_____	_____	_____	_____

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COLLEGE OF NATURAL RESOURCES
FOREST PRODUCTS LABORATORY

47TH ST. & HOFFMAN BLVD.
RICHMOND, CALIFORNIA 94804

James P. Delgado
Park Historian
US Department of Interior
National Park Service
Golden Gate National Recreation Area
Fort Mason, San Francisco, CA 94123

WOOD SPECIMEN IDENTIFICATION
Report No. 83-05

Date February 11, 1983

Date Received February 4, 1983

This report is for specimen No. 3 of the 3 specimen(s) included
in your request received on this date.

INFORMATION RECEIVED WITH SPECIMEN

Botanical name: _____

Common name: Douglas-fir

Geographic origin: _____

Nature of specimen: futtock

Historical X Commercial _____ Wood in service _____

Litigation _____ Other _____

Physical description and Comments: _____

RESULTS

Botanical name: Pseudotsuga

Commercial name: Douglas-fir

Comments: _____

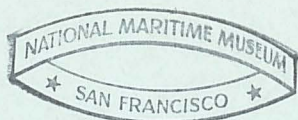
Methods used in identification:


Intermediate magnification (7 X - 30 X) _____

Microscope (100 X, 450 X) X Hand lens (10 X) X

DISPOSITION OF MATERIAL

	Retained (1 year)	Returned To You	Added to Our Collection	Discarded
Sample	_____	<u>X</u>	_____	_____
Microscope Slides	<u>X</u>	_____	_____	_____
Photographs	_____	_____	_____	_____



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